Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently Amended) A laser oscillator comprising:

a film containing a laser medium formed over a substrate;

an optical resonator;

a pumping source for supplying pumping energy to the laser medium;

an anode; and

a cathode,

wherein the laser medium comprises a luminescent layer,

wherein the luminescent layer includes a phosphorescent material dispersed into a host material at a concentration ~~of not less than 10 wt%~~ such that the luminescent layer generates excimer emission,

wherein the pumping source is electrically connected to the anode or the cathode,

wherein the phosphorescent material is an organic metal complex, and

wherein in luminescence of the phosphorescent material, light is amplified by the optical resonator.

2-5. (Canceled)

6. (Currently Amended) A laser oscillator comprising:

a film containing a laser medium formed over a substrate;

an optical resonator for obtaining a laser beam;

a pumping source for supplying pumping energy to the laser medium;

an anode; and

a cathode,

wherein the laser medium comprises a luminescent layer,

wherein the luminescent layer includes a phosphorescent material dispersed into a host material at a concentration ~~of not less than 10 wt%~~ such that the luminescent layer generates excimer emission,

wherein the anode and the cathode include a light transmitting property,

wherein the luminescent layer is interposed between the anode and the cathode,

wherein the pumping source is electrically connected to the anode or the cathode,

wherein the phosphorescent material is an organic metal complex, and

wherein in luminescence from an excimer state of the phosphorescent material, unidirectional light across the film containing the laser medium is amplified by the optical resonator.

7. (Currently Amended) A laser oscillator comprising:

a film containing a laser medium formed over a substrate;

an optical resonator for obtaining a laser beam;

a pumping source for supplying pumping energy to laser medium;

an anode; and

a cathode,

wherein the laser medium comprises a luminescent layer,

wherein the luminescent layer includes a phosphorescent material dispersed into a host material at a concentration ~~of not less than 10 wt%~~ such that the luminescent layer generates excimer emission,

wherein the luminescent layer is interposed between the anode and the cathode,

wherein the pumping source is electrically connected to the anode or the cathode,

wherein the phosphorescent material is an organic metal complex, and

wherein in luminescence from an excimer state of the phosphorescent material, unidirectional light contained within a surface composed of the film containing the laser medium is amplified by the optical resonator.

8. (Currently Amended) A laser oscillator comprising:

a film containing a laser medium formed over a substrate;

an optical resonator for obtaining a laser beam;

a pumping source for supplying pumping energy to the laser medium;

an anode; and

a cathode,

wherein the laser medium comprises a luminescent layer,

wherein the luminescent layer includes a phosphorescent material dispersed into a host material at a concentration ~~of not less than 10 wt%~~such that the luminescent layer generates excimer emission,

wherein the optical resonator comprises a plurality of reflective materials,

wherein the anode includes a light transmitting property,

wherein the luminescent layer is interposed between the cathode and the plurality of reflective materials,

wherein the pumping source is electrically connected to the anode or the cathode,

wherein the phosphorescent material is an organic metal complex, and

wherein in luminescence from an excimer state of the phosphorescent material, unidirectional light across the film containing the laser medium is amplified by the cathode and the plurality of reflective materials.

9. (Previously Presented) The laser oscillator according to claim 6, further comprising a hole transporting layer contacting with the luminescent layer and formed between the anode and the luminescent layer, the hole transporting layer having an ionization potential that is either (i) lower than that of the luminescent layer or the host material or (ii) higher than that of the luminescent layer or the host material with an energy gap of not more than 0.4 eV.

10. (Previously Presented) The laser oscillator according to claim 7, further comprising a hole transporting layer contacting with the luminescent layer and formed between the anode and the luminescent layer, the hole transporting layer having an ionization potential that is either (i) lower than that of the luminescent layer or the host material or (ii) higher than that of the luminescent layer or the host material with an energy gap of not more than 0.4 eV.

11. (Previously Presented) The laser oscillator according to claim 8, further comprising a hole transporting layer contacting with the luminescent layer and formed between the anode and the luminescent layer, the hole transporting layer having an ionization potential that is either (i) lower than that of the luminescent layer or the host material or (ii) higher than that of the luminescent layer or the host material with an energy gap of not more than 0.4 eV.

12-14. (Canceled)

15. (Original) The laser oscillator according to claim 6,

wherein the phosphorescent material generates luminescence having two or more peaks in a wavelength region of not smaller than 500 nm and not larger than 700 nm, and any one of the two or more peaks is excimer emission.

16. (Original) The laser oscillator according to claim 7,

wherein the phosphorescent material generates luminescence having two or more peaks in a wavelength region of not smaller than 500 nm and not larger than 700 nm, and any one of the two or more peaks is excimer emission.

17. (Original) The laser oscillator according to claim 8,

wherein the phosphorescent material generates luminescence having two or more peaks in a wavelength region of not smaller than 500 nm and not larger than 700 nm, and any one of the two or more peaks is excimer emission.

18-20. (Canceled)

21. (Previously Presented) The laser oscillator according to claim 6,

wherein the phosphorescent material includes an organic metal complex with platinum as its central metal.

22. (Previously Presented) The laser oscillator according to claim 7,

wherein the phosphorescent material includes an organic metal complex with platinum as its central metal.

23. (Previously Presented) The laser oscillator according to claim 8,

wherein the phosphorescent material includes an organic metal complex with platinum as its central metal.

24-29. (Canceled)

30. (Previously Presented) The laser oscillator according to claim 1, further comprising a hole transporting layer contacting with the luminescent layer and formed between the anode and the luminescent layer, the hole transporting layer having an ionization potential that is either (i) lower than that of the luminescent layer or the host material or (ii) higher than that of the luminescent layer or the host material with an energy gap of not more than 0.4 eV.

31. (Previously Presented) The laser oscillator according to claim 1,

wherein the phosphorescent material generates luminescence having two or more peaks in a wavelength region of not smaller than 500 nm and not larger than 700 nm, and any one of the two or more peaks is excimer emission.

32. (Previously Presented) The laser oscillator according to claim 1,

wherein the phosphorescent material includes an organic metal complex with platinum as its central metal.

33. (Currently Amended) A laser oscillator comprising:

a film containing a laser medium formed over a substrate;

an optical resonator for obtaining a laser beam;

a pumping source for supplying pumping energy to the laser medium;

an anode; and

a cathode,

wherein the laser medium comprises a luminescent layer,

wherein the luminescent layer includes a host material and a phosphorescent material dispersed into the host material at a concentration ~~of not less than 10 wt%~~ such that the luminescent layer generates excimer emission,

wherein at least one of the anode and the cathode includes a light transmitting property,

wherein the luminescent layer is interposed between the anode and the cathode,

wherein the pumping source is electrically connected to the anode or the cathode,

wherein the phosphorescent material is an organic metal complex, and

wherein in luminescence from an excimer state of the phosphorescent material, light is amplified by the optical resonator.

34. (Previously Presented) The laser oscillator according to claim 33, further comprising a hole transporting layer contacting with the luminescent layer and formed between the anode and the luminescent layer, the hole transporting layer having an ionization potential that is either (i) lower than that of the luminescent layer or the host material or (ii) higher than that of the luminescent layer or the host material with an energy gap of not more than 0.4 eV.

35. (Previously Presented) The laser oscillator according to claim 33,

wherein the phosphorescent material generates luminescence having two or more peaks in a wavelength region of not smaller than 500 nm and not larger than 700 nm, and any one of the two or more peaks is excimer emission.

36. (Previously Presented) The laser oscillator according to claim 33,

wherein the phosphorescent material includes an organic metal complex with platinum as its central metal.

37. (New) The laser oscillator according to claim 1, wherein the concentration is not less than 10 wt%.

38. (New) The laser oscillator according to claim 6, wherein the concentration is not less than 10 wt%.

39. (New) The laser oscillator according to claim 7, wherein the concentration is not less than 10 wt%.

40. (New) The laser oscillator according to claim 8, wherein the concentration is not less than 10 wt%.

41. (New) The laser oscillator according to claim 33, wherein the concentration is not less than 10 wt%.